CONTENTS OF VOLUME 58

NO. 1, JULY 1987

Morphology of Physiologically Identified Retinogeniculate X- and Y-Axons in the Cat
M. Sur M. Esguerra P. E. Garraghty M. F. Kritzer S. M. Sherman 1

Nonlinear Directionally Selective Subunits in Complex Cells of Cat Striate Cortex
R. C. Emerson M. C. Citron W. J. Vaughn S. A. Klein 33

Voltage Dependence of Membrane Properties of Trigeminal Root Ganglion Neurons
E. Puil B. Gimbarzevsky R. M. Miura 66

Modifications in Membrane Properties of Trigeminal Sensory Neurons During General Anesthesia *E. Puil B. Gimbarzevsky* 87

Electrical Properties of Phrenic Motoneurons in the Cat: Correlation With Inspiratory Drive
J. S. Jodkowski F. Viana T. E. Dick A. J. Berger 105

Evidence for a Fatigue-Induced Reflex Inhibition of Motoneuron Firing Rates *J. J. Woods F. Furbush B. Bigland-Ritchie* 125

Spinal Pathways Mediating Tonic, Coeruleospinal, and Raphe-Spinal Descending Inhibition in the Rat *S. L. Jones G. F. Gebhart* 138

Conductance Changes Underlying a Late Synaptic Hyperpolarization in Hippocampal CA3 Neurons *J. J. Hablitz R. H. Thalmann* 160

Basic Electrophysiological Properties of Spinal Cord Motoneurons During Old Age in the Cat
F. R. Morales P. A. Boxer S. J. Fung M. H. Chase 180

In Vitro Characterization of Neurons in the Ventral Part of the Nucleus Tractus Solitarius. I. Identification of Neuronal Types and Repetitive Firing Properties
M. S. Dekin P. A. Getting S. M. Johnson 195

In Vitro Characterization of Neurons in the Ventral Part of the Nucleus Tractus Solitarius. II. Ionic Basis for Repetitive Firing Patterns
M. S. Dekin P. A. Getting 215

Synaptic Depression in Frog Neuromuscular Junction
M. I. Glavinović 230

Announcements 247

NO. 2, AUGUST 1987

Editorial *L. Mendell P. Getting P. Strick* 249

Use-Dependent Block of Excitatory Amino Acid Currents in Cultured Neurons by Ketamine
J. F. MacDonald Z. Miljkovic P. Pennefather 251

Linear Mechanism of Orientation Tuning in the Retina and Lateral Geniculate Nucleus of the Cat
R. E. Soodak R. M. Shapley E. Kaplan 267

Retrograde Effects of Target Atrophy on Submandibular Ganglion Neurons *M. D. Womble S. Roper* 276

Neonatal Synapse Elimination in the Rat Submandibular Ganglion: Effect of Retarded Target Growth
M. D. Womble S. Roper 288

Eye Movements Induced by Pontine Stimulation: Interaction With Visually Triggered Saccades
D. L. Sparks L. E. Mays J. D. Porter 300

Effect of a Spider Toxin (JSTX) on Excitatory Postsynaptic Current at Neuromuscular Synapse of Spiny Lobster
A. Miwa N. Kawai M. Saito H. Pan-Hou M. Yoshioka 319
Spinal Pathways Mediating Tonic or Stimulation-Produced Descending Inhibition From the Periaqueductal Gray or Nucleus Raphe Magnus are Separate in the Cat
J. Sandkühler Q.-G. Fu M. Zimmermann 327
Evidence That Periodontal Pressoreceptors Provide Positive Feedback to Jaw Closing Muscles During Mastication
G. Lavigne J. S. Kim C. Valiquette J. P. Lund 342
Topography of the Oculomotor Area of the Cerebellar Vermis in Macaques as Determined by Microstimulation
H. Noda T. Fujikado 359
Timing of Spike Initiation in Cochlear Afferents: Dependence on Site of Innervation *M. A. Ruggero N. C. Rich* 379
Activity-Evoked Increases in Extracellular Potassium Modulate Presynaptic Excitability in the CA1 Region of the Hippocampus
N. P. Poolos M. D. Mauk J. D. Kocsis 404
In-Parallel and In-Series Behavior of Human Muscle Spindle Endings
D. Burke A. M. Aniss S. C. Gandevia 417

NO. 3, SEPTEMBER 1987

Gaze Control in Humans: Eye-Head Coordination During Orienting Movements to Targets Within and Beyond the Oculomotor Range
D. Guitton M. Volle 427
Physiology and Morphology of Multireceptive Neurons With C-Afferent Fiber Inputs in the Deep Dorsal Horn of the Rat Lumbar Spinal Cord
C. J. Woolf A. E. King 460
Characteristics of Spinoreticular and Spinothalamic Neurons With Renal Input *W. S. Ammons* 480
The Organization and Activity Patterns of the Anterior and Posterior Heads of the Guinea Pig Digastric Muscle
A. Lev-Tov M. Tal 496
Postnatal Development of Electrical Activity in the Locus Ceruleus
S. Nakamura F. Kimura T. Sakaguchi 510
Voluntary Control of Motor Units in Human Antagonist Muscles: Coactivation and Reciprocal Activation
C. J. De Luca B. Mambrito 525
Effects of Interaural Time Delays of Noise Stimuli on Low-Frequency Cells in the Cat's Inferior Colliculus. II. Responses to Band-Pass Filtered Noises
J. C. K. Chan T. C. T. Yin A. D. Musicant 543
Effects of Interaural Time Delays of Noise Stimuli on Low-Frequency Cells in the Cat's Inferior Colliculus. III. Evidence for Cross-Correlation *T. C. T. Yin J. C. K. Chan L. H. Carney* 562
Modulation of the Crayfish Swimmeret Rhythm by Octopamine and the Neuropeptide Proctolin
B. Mulloney L. D. Acevedo A. G. Bradbury 584
Effects of Physiological Amounts of High- and Low-Rate Chronic Stimulation on Fast-Twitch Muscle of the Cat Hindlimb. I. Speed- and Force-Related Properties
D. Kernell O. Eerbeek B. A. Verhey Y. Donselaar 598
Effects of Physiological Amounts of High- and Low-Rate Chronic Stimulation on Fast-Twitch Muscle of the Cat Hindlimb. II. Endurance-Related Properties
D. Kernell Y. Donselaar O. Eerbeek 614

Changes in Size of the Stretch Reflex of Cat and Man Attributed to Aftereffects in Muscle Spindles
J. E. Gregory D. L. Morgan U. Proske 628
Announcements 641

NO. 4, OCTOBER 1987

The Personalized Auditory Cortex of the Mustached Bat: Adaptation for Echolocation
N. Suga H. Niwa I. Taniguchi D. Margoliash 643
Effects of Hypothalamic Stimulation on Activity of Dorsomedial Medulla Neurons That Respond to Subdiaphragmatic Vagal Stimulation *H. Nishimura Y. Oomura* 655
Organization of Orientation and Direction Selectivity in Areas 17 and 18 of Cat Cerebral Cortex
N. E. J. Berman M. E. Wilkes B. R. Payne 676
Inputs From Regularly and Irregularly Discharging Vestibular Nerve Afferents to Secondary Neurons in the Vestibular Nuclei of the Squirrel Monkey. I. An Electrophysiological Analysis
J. M. Goldberg S. M. Highstein A. K. Moschovakis C. Fernández 700
Inputs From Regularly and Irregularly Discharging Vestibular Nerve Afferents to Secondary Neurons in the Vestibular Nuclei of the Squirrel Monkey. II. Correlation With Output Pathways of Secondary Neurons
S. M. Highstein J. M. Goldberg A. K. Moschovakis C. Fernández 719
Models of Synchronized Hippocampal Bursts in the Presence of Inhibition. I. Single Population Events
R. D. Traub R. Miles R. K. S. Wong 739
Models of Synchronized Hippocampal Bursts in the Presence of Inhibition. II. Ongoing Spontaneous Population Events
R. D. Traub R. Miles R. K. S. Wong L. S. Schulman J. H. Schneiderman 752
A Functional Role of Cholinergic Innervation to Neurons in the Cat Visual Cortex
H. Sato Y. Hata H. Masui T. Tsumoto 765
Effects of Cholinergic Depletion on Neuron Activities in the Cat Visual Cortex *H. Sato Y. Hata K. Hagihara T. Tsumoto* 781
The Period of Susceptibility of Visual Cortical Binocularity to Unilateral Proprioceptive Deafferentation of Extraocular Muscles
Y. Trotter Y. Frégnac P. Buisseret 795
Role of Extraocular Muscle Proprioception in the Development of Depth Perception in Cats
A. L. Graves Y. Trotter Y. Frégnac 816
Implications of Rotational Kinematics for the Oculomotor System in Three Dimensions *D. Tweed T. Vilis* 832
Quantitative Comparison of Inhibition of Visceral and Cutaneous Spinal Nociceptive Transmission From the Midbrain and Medulla in the Rat *T. J. Ness G. F. Gebhart* 850
Postsynaptic Membrane Shifts During Frequency Potentiation of the Hippocampal EPSP *T. A. Pitler P. W. Landfield* 866
Effects of Occipital Lobectomy Upon Eye Movements in Primate
D. S. Zee R. J. Tusa S. J. Herdman P. H. Butler G. Gücer 883
Announcements 908

NO. 5, NOVEMBER 1987

Serotonin and Forskolin Increase an Inwardly Rectifying Potassium Conductance in Cultured Identified *Aplysia* Neurons
D. P. Lotshaw I. B. Levitan 909
Serotonin and Forskolin Modulation of a Chloride Conductance in Cultured Identified *Aplysia* Neurons
D. P. Lotshaw I. B. Levitan 922
X-Cells in the Cat Retina: Relationships Between the Morphology and Physiology of a Class of Cat Retinal Ganglion Cells
L. R. Stanford 940
Functional and Neuronal Binocularity in Kittens Raised With Rapidly Alternating Monocular Occlusion
L. Altmann H. J. Luhmann J. M. Greuel W. Singer 965
Action-Potential Discharge in Hippocampal CA1 Pyramidal Neurons: Current Source-Density Analysis
T. L. Richardson R. W. Turner J. J. Miller 981
Action and Localization of Acetylcholine in the Cat Retina
M. Schmidt M. F. Humphrey H. Wässle 997
Active Contraction of Nerve Bundle and Identification of a Nerve-Contractor Motoneuron in *Aplysia*
Y. Umitsu H. Matsumoto H. Koike 1016
Retinal W-Cell Input to the Upper Superficial Gray Layer of the Cat's Superior Colliculus: A Conduction-Velocity Analysis
D. M. Berson 1035
Spontaneous Ictal-Like Discharges and Sustained Potential Shifts in the Developing Rat Neocortex *J. J. Hablitz* 1052
High Susceptibility to Hypoxia of Afferent Synaptic Transmission in the Goldfish Sacculus *T. Suzue G.-B. Wu T. Furukawa* 1066
Properties of Neuronal Activity Related to a Visual Reaction Time Task in the Monkey Prefrontal Cortex *T. Sawaguchi* 1080
Catecholamine Sensitivities of Neurons Related to a Visual Reaction Time Task in the Monkey Prefrontal Cortex *T. Sawaguchi* 1100
Central Sites Involved in Lateral Hypothalamus Conditioned Neural Responses to Acoustic Cues in the Rat
K. Nakamura T. Ono R. Tamura 1123
Responses of Feline Medial Medullary Reticulospinal Neurons to Cardiac Input *R. W. Blair* 1149
Motor-Unit Responses in Human Wrist Flexor and Extensor Muscles to Transcranial Cortical Stimuli
B. Calancie M. Nordin U. Wallin K.-E. Hagbarth 1168
Announcements 1186

NO. 6, DECEMBER 1987

The Two-Dimensional Spatial Structure of Simple Receptive Fields in Cat Striate Cortex *J. P. Jones L. A. Palmer* 1187
The Two-Dimensional Spectral Structure of Simple Receptive Fields in Cat Striate Cortex
J. P. Jones A. Stepnoski L. A. Palmer 1212
An Evaluation of the Two-Dimensional Gabor Filter Model of Simple Receptive Fields in Cat Striate Cortex
J. P. Jones L. A. Palmer 1233
Connectivity of Slowly Adapting Pulmonary Stretch Receptors With Dorsal Medullary Respiratory Neurons
A. J. Berger T. E. Dick 1259
Structure of the Receptive Fields of Bipolar Cells in the Salamander Retina *S. Borges M. Wilson* 1275

Enhancement of Inferior Temporal Neurons During Visual Discrimination *B. J. Richmond T. Sato* 1292
Signal Transmission in the Catfish Retina. IV. Transmission to Ganglion Cells *H. M. Sakai K.-I. Naka* 1307
Signal Transmission in the Catfish Retina. V. Sensitivity and Circuit *H. M. Sakai K.-I. Naka* 1329
Different Responses to Small Visual Errors During Initiation and Maintenance of Smooth-Pursuit Eye Movements in Monkeys *E. J. Morris S. G. Lisberger* 1351
cAMP Elevation Modulates Physiological Activity of Pyloric Neurons in the Lobster Stomatogastric Ganglion *R. E. Flamm D. Fickbohm R. M. Harris-Warrick* 1370
Functional Properties of Corticotectal Neurons in the Monkey's Frontal Eye Field *M. A. Segraves M. E. Goldberg* 1387
Voltage Spread in an Identified Interneuron of the Barnacle's Visual System *L. A. Oland A. E. Stuart J. H. Hayashi J. C. Callaway* 1420
Patch-Clamp Study of the Calcium-Dependent Chloride Current in AtT-20 Pituitary Cells *S. J. Korn F. F. Weight* 1431
Feedforward Afferent Excitation of Peripheral Inhibitors in the Crayfish Escape System *M. Takahata J. J. Wine* 1452
Voltage-Clamp Analysis of the Ionic Conductances in a Leech Neuron With a Purely Calcium-Dependent Action Potential *J. Johansen J. Yang A. L. Kleinhaus* 1468

CORRIGENDUM

Vol. 57, June 1987

Y. S. Chan, J. Kasper, and V. J. Wilson, "Dynamics and Directional Sensitivity of Neck Muscle Spindle Responses to Head Rotation." Taiwan was incorrectly added to the present address of Y. S. Chan on page 1728. The correct address is Dept. of Physiology, Faculty of Medicine, University of Hong Kong, Hong Kong.